AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-34. Canceled.

35. (New) A method comprising:

receiving at each of at least two diversity antennas that are spaced apart and/or that have different polarizations and are included in a tower mounted amplifier unit (TMA), a radio frequency (RF) signal transmitted from the same transmitter, where each RF signal received at each of the spaced apart diversity antennas is at the same frequency and carries the same information;

converting in the TMA one or more of the received diversity antenna signals into a corresponding number of different frequency signals by mixing with a first set of a corresponding number of reference signals;

band pass filtering each converted diversity antenna signal using a respective band pass filter included in the TMA;

combining in the TMA each band pass filtered diversity antenna signal and an amplified non-converted received diversity antenna signal into a composite signal;

band pass filtering the composite signal using another band pass filter included in a duplexer of the TMA;

forwarding the band pass filtered composite signal on a single external feeder to a radio base station such that a number of feeders required between the radio base station and the TMA is reduced; and

diversity processing the forwarded composite signal to obtain a single enhanced received signal corresponding to the transmitted signal.

36. (New) The method recited in claim 35, wherein the TMA comprises n antennas, said method comprising the steps of:

converting all received antenna signals except one, and

combining the non-converted antenna signal together with all frequency-converted signals to provide n-way diversity with the single external feeder.

37. (New) The method recited in claim 35, further comprising: converting the frequency-converted signals to other frequencies by mixing them with a second set of reference signals in order to obtain another set of frequency-converted signals which are forwarded to the base station as part of the band pass filtered composite signal on the single external feeder.

38. (New) The method recited in claim 35, further comprising the steps of:

converting one of the received antenna signals on into an intermediate (IF) signal at a non-used frequency, and

combining the IF signal together with an amplified non-converted antenna signal to provide 2-way diversity with the single external feeder.

39. (New) The method recited in claim 35, wherein the TMA includes two diversity antenna arrangements, one comprising a first and a second antenna, the other comprising a third and fourth antenna, said method comprising the steps of:

converting the RF signals from the second and fourth antennas into first and second intermediate frequency (IF) signals, both of the same intermediate frequency;

combining an amplified non-converted antenna signal on the first antenna together with the first IF signal and forwarding on a first external feeder to the radio base station; and

combining an amplified non-converted antenna signal on the third antenna together with the second IF signal and forwarding on a second external feeder to the radio base station, thus providing 4-way diversity with two external feeders.

40. (New) The method recited in 35, further comprising the steps of:

converting, at the radio base station, one or more of frequency-converted signals into other frequency-converted signals, all on the same intermediate frequency, by mixing them with a set of reference signals, and

subjecting the twice frequency converted signals on the common intermediate frequency to the diversity processing.

41. (New) A receiver diversity antenna arrangement, comprising:

a tower mounted amplifier unit (TMA) including at least two diversity antennas that are spaced apart and/or that have different polarizations, each of the diversity antennas being adapted for reception of radio frequency (RF) signal transmitted from the same transmitter, where each

RF signal received at each of the spaced apart diversity antennas is at the same frequency and carries the same information;

one or more frequency converters in the TMA each adapted to convert a respective one of the diversity antenna signals to a respective, different frequency signal by mixing it with a corresponding reference frequency;

one or more band pass filters in the TMA for respectively band pass filtering each converted diversity antenna signal;

a combiner in the TMA for combining each band pass filtered diversity antenna signal and an amplified non-converted received diversity antenna signal to form a composite signal;

a band pass filter included in a duplexer of the TMA for band pass filtering the composite signal;

a single feeder external to the TMA and coupled to a radio base station for forwarding the band pass-filtered composite signal to the radio base station; and

a diversity processor in the radio base station for diversity processing the forwarded composite signal to obtain an enhanced received signal corresponding to the transmitted signal.

42. (New) The receiver diversity antenna arrangement recited in claim 41, wherein a signal from each diversity antenna follows a respective diversity branch, the TMA further comprising a frequency converter in each diversity branch except one.

43. (New) The receiver diversity antenna arrangement recited in claim 41, wherein the TMA includes a second set of frequency converters adapted to convert the frequency-

converted signals into another set of frequency-converted signals for transport to the radio base station as part of the band pass filtered composite signal on the single external feeder.

44. (New) The receiver diversity antenna arrangement recited in claim 41, further comprising:

a single frequency converter converting the antenna signal from one of the diversity antennas to a non-used intermediate frequency within a full receiver band to form an IF signal,

wherein the combiner is configured to combine the received signal from another of the diversity antennas with the IF signal into the composite signal to provide 2-way diversity with the signal external feeder.

45. (New) The receiver diversity antenna arrangement recited in claim 41, further comprising:

two diversity antenna arrangements which together include four antennas, each of the two diversity antenna arrangements comprising a respective single external feeder, thereby providing 4-way diversity with the two external feeders.

46. (New) A site comprising a radio base station coupled to at least one tower-mounted unit (TMA) via a single feeder and including a receiver diversity antenna arrangement according to claim 41.

47. (New) A method comprising:

receiving at each of at least two diversity antennas that are spaced apart and/or that have different polarizations and are included in a tower mounted amplifier unit (TMA), a radio frequency (RF) signal transmitted from the same transmitter, where each RF signal received at each of the diversity antennas is at the same frequency and carries the same information;

converting in the TMA each of the received diversity antenna signals into a corresponding number of different frequency signals by mixing with a first set of a corresponding number of reference signals;

band pass filtering each converted diversity antenna signal using a respective band pass filter included in the TMA;

combining in the TMA the filtered diversity antenna signals into a composite signal;

band pass filtering the composite signal using another band pass filter included in a duplexer of the TMA;

forwarding the band pass filtered composite signal on a single external feeder to a radio base station such that a number of feeders required between the radio base station and the TMA is reduced; and

diversity processing the forwarded composite signal to obtain a single enhanced received signal corresponding to the transmitted signal.

48. (New) The method recited in claim 47, wherein the TMA comprises n antennas, said method comprising converting all received antenna signals and combining them to provide n-way diversity with the single external feeder.

49. (New) The method recited in claim 47, further comprising:

converting the frequency-converted signals to other frequencies by mixing them with a second set of reference signals in order to obtain another set of frequency-converted signals which are combined into the composite signal and forwarded to the radio base station on the single external feeder.

50. (New) The method recited in claim 47, further comprising the step of converting, at a frequency converter connected between the TMA and the radio base station, the composite signal.

51. (New) A receiver diversity antenna arrangement, comprising:

a tower mounted amplifier unit (TMA) including at least two diversity antennas that are spaced apart and/or that have different polarizations, each of the diversity antennas being adapted for reception of radio frequency (RF) signal transmitted from the same transmitter, where each RF signal received at each of the spaced apart diversity antennas is at the same frequency and carries the same information;

one or more frequency converters in the TMA each adapted to convert a respective one of the diversity antenna signals to a respective, different frequency signal by mixing it with a corresponding reference frequency;

one or more band pass filters in the TMA for respectively band pass filtering each converted diversity antenna signal;

a combiner in the TMA for combining all of the band pass filtered diversity antenna signals into a composite signal;

a further band pass filter included in a duplexer of the TMA for band pass filtering the composite signal;

a single feeder external to the TMA and coupled to a radio base station for forwarding the band pass-filtered, composite signal to the radio base station; and

a diversity processor in the radio base station for diversity processing the forwarded composite signal to obtain an enhanced received signal corresponding to the transmitted signal.

52. (New) The receiver diversity antenna arrangement recited in claim 51, wherein a signal from each diversity antenna follows a respective diversity branch, the TMA further comprising a frequency converter in each diversity branch.

53. (New) The receiver diversity antenna arrangement recited in claim 51, where the frequency converters are configured to convert their respective diversity antenna signals to a non-used intermediate frequency within a full receiver band to form multiple IF signals provided to the combiner.

54. (New) A site comprising a radio base station, connected to at least one tower-mounted unit (TMA) of a receiver diversity antenna arrangement according to claim 51.

55. (New) The site according to claim 54, further comprising:

a frequency converter connected provided between the TMA of the receiver diversity antenna arrangement and the radio base station, the frequency converter adapted to convert the composite signal outputted from the TMA on the single external feeder.